

REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

To place the application in better form, Applicants submit herewith a substitute specification, which includes a new abstract. For the Examiner's convenience, also provided is a marked-up copy of the original specification showing the portions thereof which are being changed. The substitute specification includes the same changes as are indicated in the marked-up copy. Applicants' undersigned attorney has reviewed the substitute specification and submits that the substitute specification contains no new matter.

Claims 1-10 are presented for consideration. Claim 1 is the sole independent claim. Claims 1-3 and 5-9 have been amended to clarify features of the subject invention. Support for these changes can be found in the original application, as filed. Therefore, no new matter has been added.

Applicants request favorable reconsideration and withdrawal of the rejections set forth in the above-noted Office Action.

Claims 1-16 and 10 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,534,970 to Nakashima et al. Claims 7-9 were rejected under 35 U.S.C. § 103 as being unpatentable over the Nakashima et al. patent in view of U.S. Patent No. 5,170,207 to Tezuka et al. Applicants submit that the cited art does not teach many features of the present invention, as recited in claims 1-10. Therefore, these rejections are respectfully traversed.

Independent claim 1 recites a scanning exposure apparatus that includes an illumination optical system for defining an illumination region, having a slit-like section, on an original with use of laser light from a continuous emission type excimer laser, and driving means for

relatively, scanningly moving an original and a substrate relative to the illumination region. The illumination optical system includes a scanning optical system for scanning a pupil plane of the illumination system with the laser light to produce a secondary light source thereon, such that the illumination region is defined by light from the secondary light source. Also, when the width of the illumination region is W (mm), the scan speed of at least one of the original and the substrate is V (mm/sec) and the time necessary for defining the secondary light source once is T (sec), a relation $W/V = nT$ is satisfied, where n is an integer.

By such an arrangement, the present invention effectively accomplishes continuously drawing the secondary light source with a more uniform distribution.

Applicants submit that the cited art, whether taken individually or in combination, does not teach or suggest such features of the present invention, as recited in independent claim 1.

The Nakashima et al. patent shows an arrangement mainly for use with a pulse emission type excimer laser. That patent teaches vibrating a mirror 8 so as to reduce illuminance non-uniformness caused by speckle that results from the coherency of the laser. Applicants submit, however, that the arrangement in the Nakashima et al. patent is completely different from the present invention recited in independent claim 1, and that the Nakashima et al. patent does not teach or suggest the salient features of Applicants' present invention as recited in that claim. Specifically, that patent teaches neither (i) the use of a continuous emission type excimer laser nor (ii) the relationship among the width of the illumination region, the scan speed of the original and/or the substrate, or the time necessary for defining a secondary light source once, as in the present invention. Accordingly, the Nakashima et al. patent does not teach or suggest many features of the present invention as recited in independent claim 1.

Applicants further submit that the remaining art cited does not cure the deficiencies noted above with respect to the Nakashima et al. patent.

The Tezuka et al. patent shows a projection optical system made of a single glass material. That patent, however, as with the Nakashima et al. patent, does not teach or suggest the salient features of Applicants' present invention, as recited in independent claim 1, which have been discussed above. Notably, the Tezuka et al. patent teaches neither (i) the use of a continuous emission type excimer laser nor (ii) the particular relationship of the present invention recited in that claim. Therefore, the Tezuka et al. patent adds nothing to the teachings of the Nakashima et al. patent that would render obvious Applicants' present invention as recited in independent claim 1.


For the reasons noted above, Applicant submits that the present invention, as recited in independent claim 1, is patentably defined over the cited art.

Dependent claims 2-10 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in independent claim 1. Individual consideration of these dependent claims is requested.

Applicants submit that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are also requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,



Attorney for Applicants
Steven E. Warner
Registration No. 33,326

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200
SEW/eab

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